DATACON DRIVER CHASSIS (DD-110-1) ACCEPTANCE TEST PROCEDURE

Subject: Incoming Acceptance Procedure For The DD-110-1

Equipment:
VME Chassis configured with working V110, P110, T110, MVME 167
Datacon Line Monitor
LeCroy 9450a or Equivalent
Assorted RG-62 cables with Tee's & 100 ohm termination's.

Date Test Started: / /   **Date Test Completed:** / /

Chassis Serial Number :

Test Technician:

Visual Inspection

Step 1. Observe unit for any obvious damage via shipping.

Observation:

Step 2. Observe the printed circuit board for any obvious problems like missing components, solder splashes, missing solder pads, etc.

Observation:

Step 3. Each unit should have the following power supplies mounted internally:
                 + 5 V DC   LAMBDA   LSS-35-5
                 - 15 V DC   LAMBDA   LSS-37-15
Observation:

ACCEPT   REJECT
(CIRCLE ONE)

Datacon Driver Configuration

Step 4. Utilize the following wire list for testing Datacon Driver Assembly. Wire Wrap the following jumpers.

E3-E7
E4-E8
E5-E9
E6-E10
E53-E57
E54-E58
E55-E59
E56-E60
E15-E20
E44-E35
E25-E22
E31-E33
E69-E75
E91-E78
E70-E73
E82-E80
E12-E38
E42-E67
E98-E26-E21-E23-E27-E34-E32-E74-E76-E72-E77-E79-E81

DC Power Supply Test

Step 5. Remove power supply connector P3 from printed circuit board.

  a) Turn power on . Measure Voltages.

<u>Connector Pin</u>	<u>Measured Voltage</u>
P3-1	**+5v**
P3-2,3	**GND**
P3-4	**-15v**

  b) Turn power off re- connect P3 to Printed circuit board.

  c) Turn power on and observe LED's on front panel labeled +5 and-15 lit.

    1) Measure power supply voltages as stated in step 5a.

    2) Measure power supply voltages at front panel test points

<u>POWER SUPPLY</u>	<u>MEASURED TOLERANCE</u>	<u>RIPPLE TOLERANCE</u>
+ 5 V DC	**+ 4.75 to 5.25 vdc**	**120 mv pk to pk**
- 15 V DC	**- 14.25 to 15.75 vdc**	**150 mv pk to pk**

ACCEPT REJECT

(CIRCLE ONE)

CHASSIS FUNCTIONAL TEST

Step 6. Hookup test unit.
        a) Connect line #1 of unit under test to Hulliger Bucket with Address #40
        b) Connect line #2 of unit under test to Hulliger Bucket with Address #50
        c) Connect Serial cable from T110 channel 1&2 to J1 of unit under test.
        d) Connect RS-232 from COM 3 of PC to VME Processor Serial Line.

Step 7. Startup Windows

Step 8. Startup Terminal Program located in the Accessories Group
        a) select File Open
        b) select Driver.trm (you need to be in the C:\windows Directory)
        c) click OK

Step 9. Press the Reset button on the MVME 167.
        a) You should see information scrolling across the terminal screen. If not look into the serial connection. Once this has stopped you should see the following:
Computer Reply:
```
#go to kerner's directory
cd "/home/cfsa/kerner"
value = 0 = 0x0
#now go to the script directory
cd "datacon/debug"
value = 0 = 0x0
```

Step 10. Loading diagnostic files.
        a) using the mouse change terminal function keys to LEVEL 2.
        b) using the mouse click Dir/Joe
Computer reply:
```
-> <cd_joe
cd "/home/cfsa/skelly/VxWorks/dtcn"
value = 0 = 0x0
->
```
        c) using the mouse click StartupHw
Computer reply:
```
-> <startupHW
ld < HWdtcnLib.o
value = 8380376 = 0x7fdfd8
ld < dtcnX.o
value = 8382180 = 0x7fe6e4
dtcnDrv()
0x786be0 (tShell): Installed dtcnDrv, num=11
value = 0 = 0x0
Xinit( )
0x786be0 (tShell): New dtcnMaster: pDtcnMaster=0x77bc60; baseSram=0xf0e00000,
lenSram=0x100000
0x786be0 (tShell): dtcnMasterInit dtcnF: *ICR5 = 0xfa
0x786be0 (tShell): Config dtcnMaster: pDtcnMaster=0x77bc60; baseSram=0xf0e00000,
lenSram=0x100000:
VMEIDBNLV110....XX000000........nJ  59
```
A large data table followed by:
```
value = 1 = 0x1
->
```
        d) using the mouse click Load Stress Tst
Computer Reply:
```
 ld < dtcnStress.o
value = 7860676 = 0x77f1c4
->
```

Step 11. Testing Datacon Line 1
        a) Click Stress1 Test Ln1

Computer Reply:
```
-> ld < dtcnStress.o
value = 7862712 = 0x77f9b8
-> sp Xstress1,1,0x40,0x1e,1000,1000,20
task spawned: id = 0x6cfccc, name = t1
value = 7142604 = 0x6cfccc
-> Stress1 Executing 1000 repetitions of 1000-xmission blocks
For line 1, address 0x40, TimeLineCode 0x1e

Hulliger at 0x40 has been put into loopback mode

dumpDtcnFile: (0x00781db4) /dtcnF0/stress1 on line 1 of master dtcnF
dumpDtcnFile: smbWordsAlloc/Wrote=2/1 ppmUser=0 evCode=0 rmbRptCnt=0
dumpDtcnFile: irbNdx=-1, rmbIndexReading=-1, schedFlag=0
dumpDtcnFile: pMdb=0xf0efffd0(0x100fffd0), pSmb=0xf0effff0(0x100ffff0)
dumpDtcnFile: pRmb[0] {addr(MstrAddr)/Rdy}: 0xf0efffb8(0x100fffb8)/-1
dumpDtcnFile: Mdb: smbElemCount=1, rmbRepeatCount=0, rmbRepeatIndex=0
dumpDtcnFile: Mdb: pSmb=0x100ffff0
dumpDtcnFile: Mdb: pRmb[0]=0x100fffb8
dumpDtcnFile: (0x00781db4) /dtcnF0/stress1 on line 1 of master dtcnF
dumpDtcnFile: smbWordsAlloc/Wrote=1001/1000 ppmUser=0 evCode=0 rmbRptCnt=0
dumpDtcnFile: irbNdx=-1, rmbIndexReading=-1, schedFlag=0
dumpDtcnFile: pMdb=0(0), pSmb=0xf0eff054(0x100ff054)
```

line	addr	code	block reps	block DAC	block DNA	block NOR	block ILL	xmsn DAC	xmsn DNA	xmsn ILL	xmsn DATERR
1	0x40	0x1e	1	0	0	1	0	0	0	0	0

At this point you should see a flashing LED for Line 1 on the front panel. If not begin to debug this Datacon Line.
This test once started will run for several minutes. Loop Back Mode. If the first attempt to start this LoopBack Mode Test fails to get a response from the Datacon Device the test will abort. You will see the following:
Computer Reply:
```
-> sp Xstress1,1,0x40,0x1e,1000,1000,20
task spawned: id = 0x6cfccc, name = t2
value = 7142604 = 0x6cfccc
-> Stress1 Executing 1000 repetitions of 1000-xmission blocks
For line 1, address 0x40, TimeLineCode 0x1e
SetLoopBack dtcn Status Error: exp=0x4, act=0x2
0x6cfccc (t2): dtcnClose /dtcnF0/stress1
```

line	addr	code	block reps	block DAC	block DNA	block NOR	block ILL	xmsn DAC	xmsn DNA	xmsn ILL	xmsn DATERR
1	0x40	0x1e	1000	–286331154	–286331154	–286331154	–286331154	–286331154	–286331154	–286331154	–286331154

b) Once the LoopBack Test is running Observe the Datacon Transmission for the following parameters:

1) Frame Pulse Width   **1.6 <= tw >= 1.2 msec @ 50%**
2) Frame Rise Time   **tr <= .250 msec 10% to 90%**
3) Data Pulse Width   **.350 <= tw <= .500 msec @ 50%**
4) InterPulse Ringing   **<= 9 volts peak to peak**
5) Datacon Amplitude   **>= 20 volts peak to peak**

ACCEPT   REJECT
(CIRCLE ONE)

Step 12. Testing Datacon Line 2
    a) Click Stress1 Test Ln2
       Repeat Step 11a and Step 11b for Line 2

ACCEPT   REJECT
(CIRCLE ONE)

Step 13. Testing Datacon Line 3
Move Serial cable from J1 on the unit under test to J2.
Move Datacon Line 1 cable to Line 3
Move Datacon Line 2 cable to Line 4
   a) Repeat Step 11a and 11b

             ACCEPT REJECT
                  (CIRCLE ONE)

Step 14. Testing Datacon Line 4
   a) Click Stress1 Test Ln2
      Repeat Step 11a and 11b

             ACCEPT REJECT
                  (CIRCLE ONE)

Step 15. Re configure Datacon Driver Chassis
Utilize the following wire lists for the appropriate board configuration.

WIRE LIST 2-WAY FANOUT	WIRE LIST 1-WAY FANOUT
E3-E7-E9	E3-E7
E4-E8-E10	E4-E8
E5-E57-E59	E5-E9
E6-E58-E60	E6-E10
E15-E20	E53-E57
E44-E21	E54-E58
E25-E22	E55-E59
E31-E23	E56-E60
E69-E35	E15-E20
E91-E34	E44-E35
E70-E33	E25-E22
E82-E32	E31-E33
E98-E26-E27	E69-E75
	E91-E78
	E70-E73
	E82-E80
	E12-E38
	E42-E67
	E98-E26-E21-E23-E27-E34-E32-E74-E76-E72-E77-E79-E81